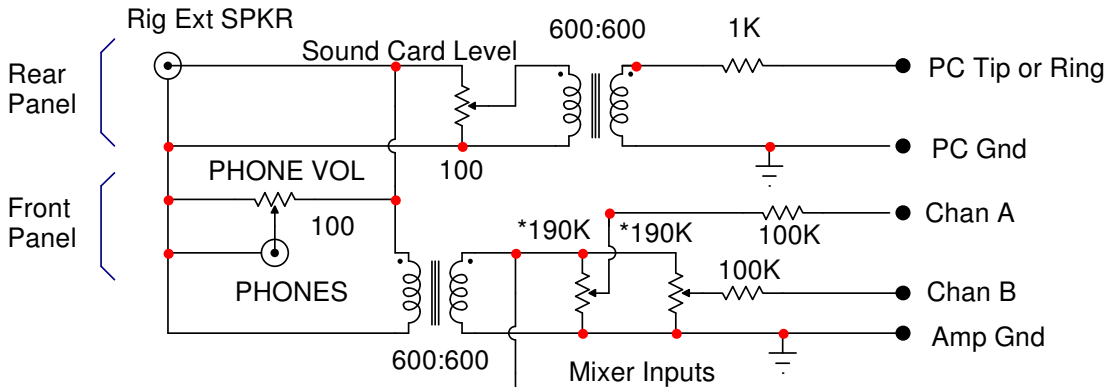


# NWS APRS INTERFACE AND HEADPHONE ADAPTER

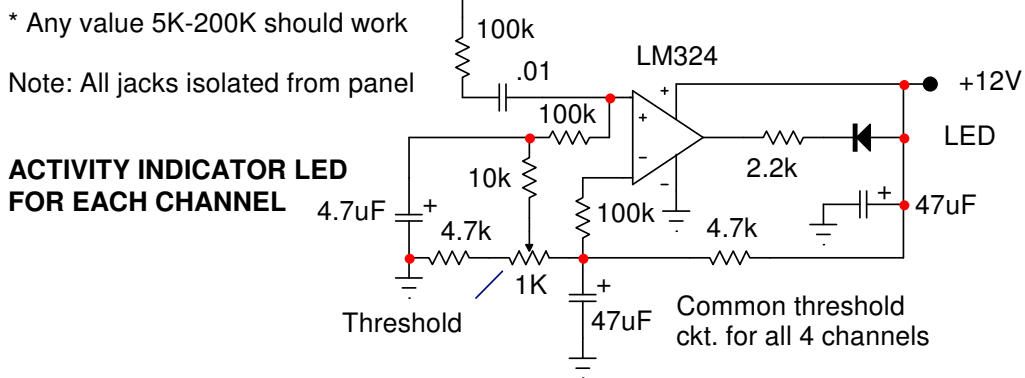
## BASIC CIRCUIT - DUPLICATE FOR EACH RADIO



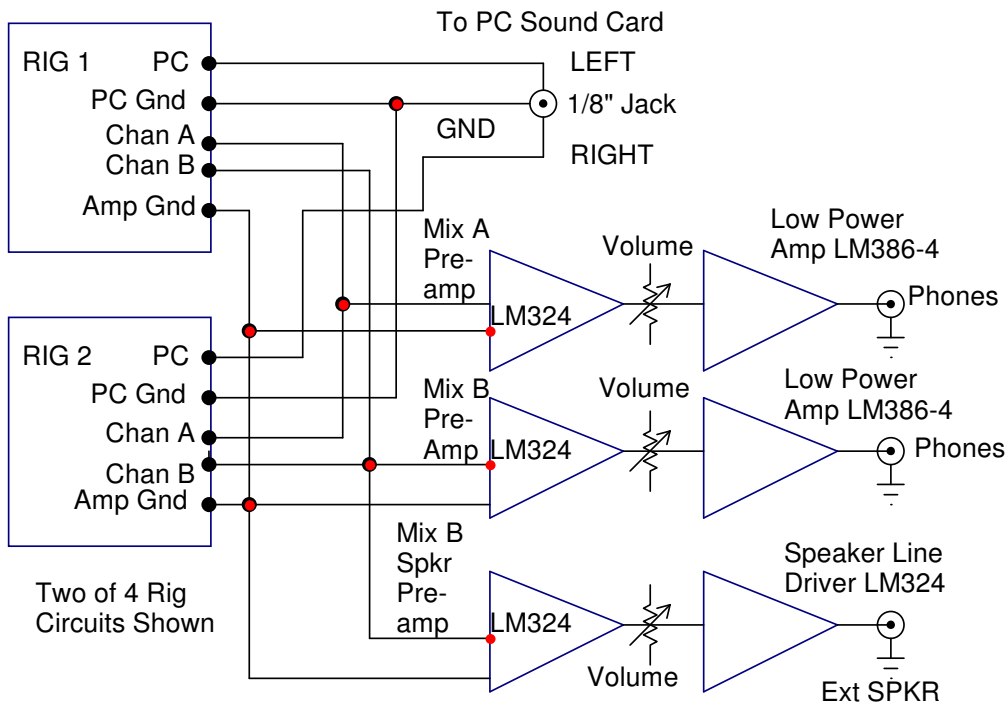
\* Any value 5K-200K should work

Note: All jacks isolated from panel

### ACTIVITY INDICATOR LED FOR EACH CHANNEL



## INTERCONNECT INDIVIDUAL RADIO CIRCUITS AS SHOWN BELOW



## NWS SKYWARN APRS PC INTERFACE

Clifton W Gantt 9/22/2007

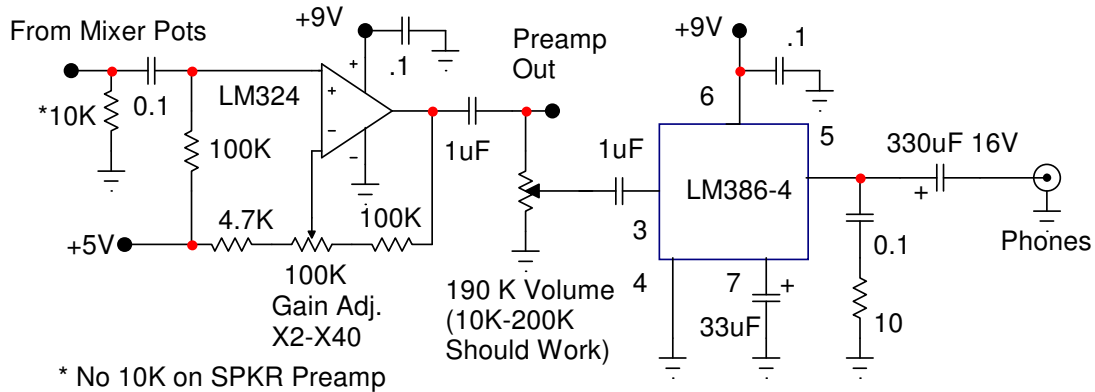
Free For Personal/NWS Use

w4cwg@w4cwg.com

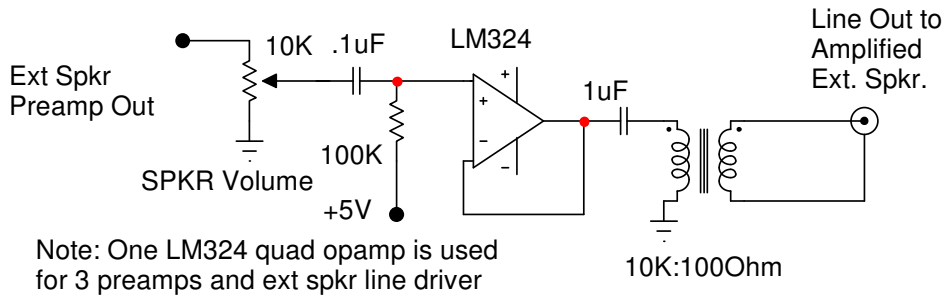
Page 1 of 3

**MIXER A & B / EXT SPKR PREAMPS  
( 3 Identical)**

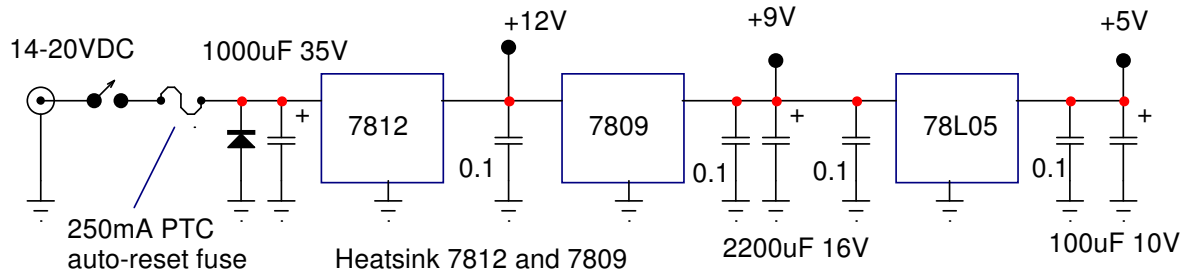
**1/4W HEADPHONE AMPLIFIER (1 of 2 shown)**



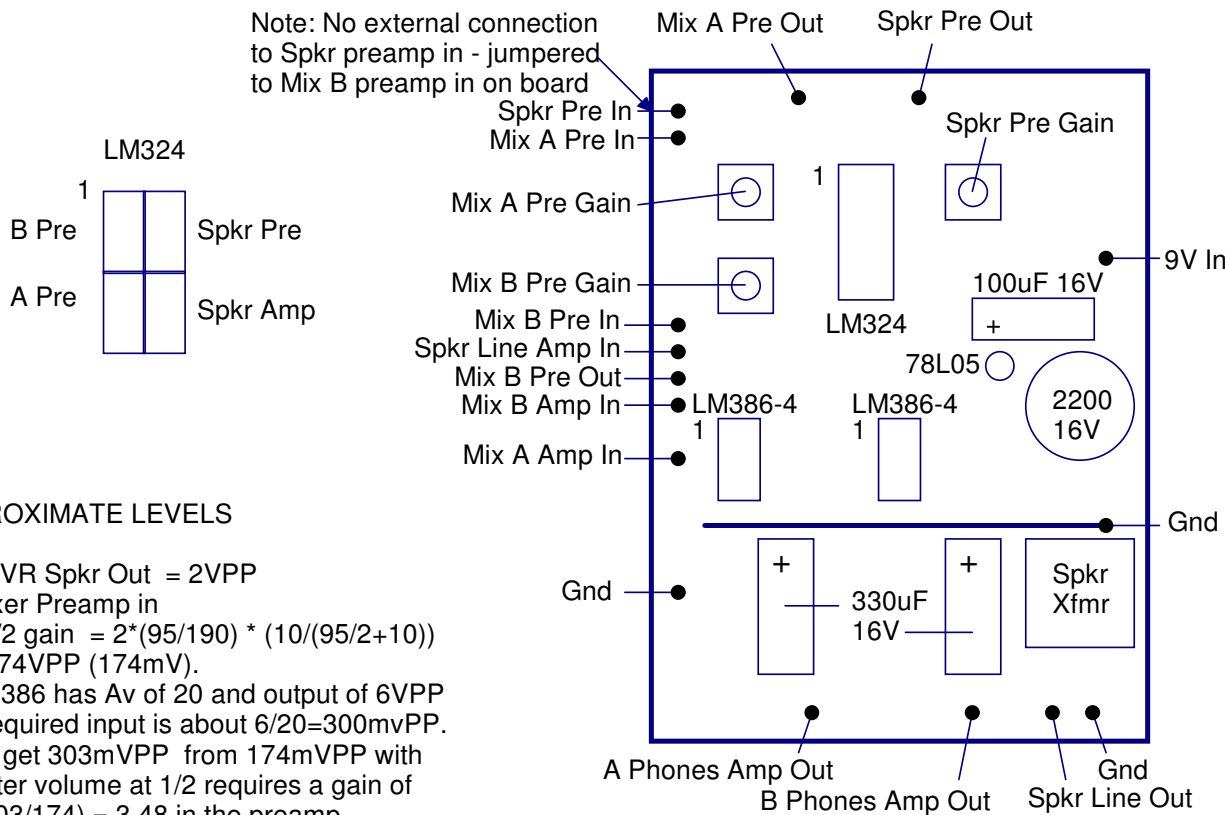
**AMPLIFIED EXTERNAL (PC STYLE) SPEAKER DRIVER**



**REGULATED PS**



# MAIN BOARD COMPONENT SIDE LAYOUT



## APPROXIMATE LEVELS

- A. XCVR Spkr Out = 2VPP
- B. Mixer Preamp in  
 $@ 1/2 \text{ gain} = 2 * (95/190) * (10/(95/2+10)) = .174\text{VPP} (174\text{mV})$ .
- C. LM386 has Av of 20 and output of 6VPP so required input is about  $6/20=300\text{mvPP}$ .
- D. To get 303mVPP from 174mVPP with master volume at 1/2 requires a gain of  $2*(303/174) = 3.48$  in the preamp.
- E. Output level for ext PC spkrs needs to be 200mV with 10:1 division ratio in transformer. With 174mvPP this requires a gain of  $10*(200/174) = 11.5$  or 23 with the speaker volume set at 1/2.
- F. All the preamps have adjustable gain of about 2 to 40 which covers all these different settings.
- G. The low frequency -6dB point is set by the 330uF output coupling capacitor to about 100Hz for 8-Ohm headphones.

## CAUTION

Operating with very high volume, using low impedance headphones (<80ohms), driving multiple headphones in parallel, or driving a speaker directly may damage the headphone amp chips. The two headphone earpieces are driven in parallel so present an even lower Z to the amps.